

Chemical Analysis Report

SW-DIST-2020-02-13-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Crystal River, GOM- Withlacoochee**
Request ID: **RQ-2020-02-10-25**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 10-MAR-2020 12:18



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Gulf of Mexico (Withlacoochee) by Bar

Collection Date/Time: 02/12/2020 13:15

Field ID: G5SW0157

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2157251	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P378900	
	EPA 300.0 Rev. 2.1	Bromide	18		mg Br/L	P379449	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P379740	
	SM 2540 D-2011	TSS	6	I	mg/L	P379343	
	SM 4500 F-C-2011	Fluoride	0.40		mg F/L	P379746	
2157254	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P379355	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P379169	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P379269	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P379985	
	SM 5310 B-2011	Organic Carbon	7.7		mg C/L	P379080	
2157257	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P378909	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Gulf of Mexico (Withlacoochee) by Bar

Collection Date/Time: 02/12/2020 13:20

Field ID: G5SW0157DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2157252	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P378900	
	EPA 300.0 Rev. 2.1	Bromide	20		mg Br/L	P379449	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P379740	
	SM 2540 D-2011	TSS	6	I	mg/L	P379343	
	SM 4500 F-C-2011	Fluoride	0.42		mg F/L	P379746	
2157255	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P379355	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P379169	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P379269	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P379985	
	SM 5310 B-2011	Organic Carbon	7.5		mg C/L	P379080	
2157258	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P378909	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Field_Blank

Collection Date/Time: 02/12/2020 13:30

Field ID: FB 02122020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2157253	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P378900	
	EPA 300.0 Rev. 2.1	Bromide	0.013	U	mg Br/L	P379449	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P379406	
	SM 2540 D-2011	TSS	2	U	mg/L	P379342	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P379409	
2157256	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P379460	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P379176	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P379538	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P379502	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P378988	
2157259	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P378912	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378900

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379449

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379355

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379460

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379169

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379176

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379269

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379538

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379502

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379985

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378909

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378912

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P379406

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P379740

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011
Batch ID: P379342

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P379343

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P379409

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P378988

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P379080

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379449

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379169

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	101		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379176

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378912

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	101		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P379406

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 2320 B-2011
Batch ID: P379740

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	106		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P379409

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	92 - 103

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P378988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P379080

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156692	Bromide	96.0	96.7	P/P	90 - 110
2157502	Bromide	95.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157004	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157288	Ammonia-N	96.1	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157614	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379176

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157288	Kjeldahl Nitrogen	97.7	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157254	NO2NO3-N	99.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157236	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157226	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157003	Total-P	108	109	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157257	O-Phosphate-P	95.9	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378912

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157292	O-Phosphate-P	98.0	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P379409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157235	Fluoride	97.8	98.9	P/P	89 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157633	Fluoride	97.3	98.9	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P378988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157211	Organic Carbon	99.4	99.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P379080

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156878	Organic Carbon	96.6	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157497	Turbidity	10.3	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156692	Bromide	0.725	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157004	Ammonia-N	0.514	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157288	Ammonia-N	3.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157614	Kjeldahl Nitrogen	1.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157288	Kjeldahl Nitrogen	1.29	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157254	NO2NO3-N	0.182	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157236	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157226	Total-P	0.546	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157003	Total-P	0.203	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157257	O-Phosphate-P	0.633	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378912

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157292	O-Phosphate-P	1.12	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P379406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157235	Total Alkalinity	0.763	Sample	P	0 - 2.8

Reference Method: SM 2320 B-2011
Batch ID: P379740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2159014	Total Alkalinity	0.516	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P379409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157235	Fluoride	1.00	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157633	Fluoride	0.979	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P378988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157211	Organic Carbon	0.481	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P379080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156878	Organic Carbon	0.562	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97528

Included Lab Sample IDs: 2157251, 2157252, 2157253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97529

Included Lab Sample IDs: 2157257, 2157258, 2157259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	97.6	P/P	90 - 110
O-Phosphate-P	98.3	99.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97559

Included Lab Sample IDs: 2157256

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	103	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97590

Included Lab Sample IDs: 2157254, 2157255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97683

Included Lab Sample IDs: 2157254, 2157255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97692

Included Lab Sample IDs: 2157254, 2157255, 2157256

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	98.8	P/P	90 - 110
Kjeldahl Nitrogen	100	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97714

Included Lab Sample IDs: 2157254, 2157255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97738

Included Lab Sample IDs: 2157253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A97738

Included Lab Sample IDs: 2157253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97738

Included Lab Sample IDs: 2157253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97750

Included Lab Sample IDs: 2157251, 2157252, 2157253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97754

Included Lab Sample IDs: 2157256

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97764

Included Lab Sample IDs: 2157256

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97845

Included Lab Sample IDs: 2157251, 2157252

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	106	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97845

Included Lab Sample IDs: 2157251, 2157252

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97860

Included Lab Sample IDs: 2157256

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97985

Included Lab Sample IDs: 2157254, 2157255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	
			LCS	SMP	MS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					10.3	
EPA 300.0 Rev. 2.1	Bromide	101	96.0	96.7	95.5		0.725
EPA 350.1 Rev. 2.0	Ammonia-N	96.1	101	101			0.514
	Ammonia-N	95.4	96.1	100			3.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	101	102			1.16
	Kjeldahl Nitrogen	101	97.7	99.2			1.29
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.8				0.182
	NO2NO3-N	102	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	105	105	106			0.546
	Total-P	109	108	109			0.203
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	95.9	96.6			0.633
	O-Phosphate-P	101	98.0	99.1			1.12
SM 2320 B-2011	Total Alkalinity	104				0.763	
	Total Alkalinity	106				0.516	
SM 4500 F-C-2011	Fluoride	99.3	97.8	98.9			1.00
	Fluoride	97.1	97.3	98.9			0.979
SM 5310 B-2011	Organic Carbon	101	99.4	99.9			0.481
	Organic Carbon	97.8	96.6	97.2			0.562

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2157251, 2157252, 2157253
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2157251, 2157252, 2157253
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2157254, 2157255, 2157256
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2157254, 2157255, 2157256
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2157254, 2157255, 2157256
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2157254, 2157255, 2157256
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2157257, 2157258, 2157259
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2157251, 2157252, 2157253
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2157251, 2157252, 2157253
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2157251, 2157252, 2157253
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2157254, 2157255, 2157256

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	02/13/2020			02/13/2020 16:14	Yen Ta	2157251, 2157252, 2157253
EPA 300.0 Rev. 2.1	02/13/2020			02/22/2020 10:19	Lipi Saha	2157251
	02/13/2020			02/22/2020 10:37	Lipi Saha	2157252
	02/13/2020			02/22/2020 10:54	Lipi Saha	2157253
EPA 350.1 Rev. 2.0	02/13/2020			02/19/2020 13:24	Ping Hua	2157254
	02/13/2020			02/19/2020 13:26	Ping Hua	2157255
	02/13/2020			02/21/2020 13:07	Ping Hua	2157256
EPA 351.2 Rev. 2.0	02/13/2020	02/19/2020 11:48	Sima Feizi	02/20/2020 18:28	Jhamieka S. Greenwood	2157254
	02/13/2020	02/19/2020 11:48	Sima Feizi	02/20/2020 18:29	Jhamieka S. Greenwood	2157255
	02/13/2020	02/19/2020 11:48	Sima Feizi	02/20/2020 19:17	Jhamieka S. Greenwood	2157256
EPA 353.2 Rev. 2.0	02/13/2020			02/20/2020 12:05	Lauren Lees	2157254
	02/13/2020			02/20/2020 12:11	Lauren Lees	2157255
	02/13/2020			02/21/2020 11:14	Beverly Y. Sanders	2157256
EPA 365.1 Rev. 2.0	02/13/2020	02/24/2020 16:08	Yen Ta	02/27/2020 12:55	Benjamin T. Nordmann	2157256
	02/13/2020	03/03/2020 13:55	Yen Ta	03/04/2020 10:20	Benjamin T. Nordmann	2157254, 2157255
EPA 365.1 Rev. 2.0 dissolved	02/13/2020			02/13/2020 15:37	Carlos Miranda	2157257
	02/13/2020			02/13/2020 15:40	Carlos Miranda	2157258
	02/13/2020			02/13/2020 16:21	Carlos Miranda	2157259
SM 2320 B-2011	02/13/2020			02/21/2020 07:51	Dale L. Simmons	2157253
	02/13/2020			02/26/2020 00:09	Dale L. Simmons	2157251
	02/13/2020			02/26/2020 00:21	Dale L. Simmons	2157252
SM 2540 D-2011	02/13/2020			02/18/2020 15:02	Yijie Li	2157251, 2157252, 2157253
SM 4500 F-C-2011	02/13/2020			02/21/2020 07:51	Dale L. Simmons	2157253
	02/13/2020			02/25/2020 21:45	Dale L. Simmons	2157251
	02/13/2020			02/25/2020 21:49	Dale L. Simmons	2157252
SM 5310 B-2011	02/13/2020			02/15/2020 04:25	Lauren Lees	2157256
	02/13/2020			02/18/2020 04:56	Madeline Funaro	2157254
	02/13/2020			02/18/2020 05:08	Madeline Funaro	2157255